

Appl. No. 10/511,687
Reply to Office Action
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AMENDMENT TO THE DRAWINGS:

Please enter one sheet of replacement drawing with a revised Fig. 1.

REMARKS

The drawings were objected to. In response, Fig. 1 has been amended to show the overlapping of the bag stack while leaving the front edge of the leading bag exposed. The other features not shown in the drawings have been canceled from the claims.

Headings have been provided in the specification.

In response to the rejection under 35 U.S.C. 112, second paragraph, the term "imbrication" which means "overlapping" is introduced in claim 2 and referred back to in subsequent claims.

Claims 1 and 5-8 were rejected under 35 U.S.C. 102(b) as being anticipated by Koehn (German Patent No. DE 195 05 277).

It was said that with respect to Claims 1 and 5-7 herein, Koehn teaches a device having a winding-up roller 10, a drive for the winding-up roller, a roll which is arranged on the winding-up roller and comprises at least one film web and stacks of bags arranged thereon, such that the openings of the bags are arranged at the front, as seen in the unwinding direction; the web is guided over a deflecting roller.

It was said that with respect to Claim 8, the method described in these claims would inherently result from the use of the device of Koehn as advanced above.

Claims 2-4 were rejected under 35 U.S.C. 103(a) as being unpatentable over Koehn as applied to claims 1 and 5-8 above, and further in view of Honegger (U.S. Patent No. 4,688,368).

It was said that with respect to Claims 2-4, Koehn is advanced above. Honegger, Figures 1-5, teaches an imbrication that is formed such that the leading edges of the bags are located beneath the respectively preceding bag stack. It was further said that it would have been obvious

to one of ordinary skill in the art to form the bag roll, as taught by Honegger, because one of ordinary skill would have been expected to have routinely experimented to determine the optimum dimensions for a particular use.

In response it is noted one of the significant features of the pending claim 1 is that the openings of the bags are arranged at the front as seen in the unwinding direction as represented by the arrow in amended Fig. 1. Contrary to what is said in the Office action, this is not taught or suggested by Koehn.

Please find submitted herewith an English translation of the detailed description and claims of Koehn.

As the Examiner refers to the Koehn, DE 195 05 277 it may be seen from this reference in a comparison of Fig. 1 and Fig. 7 that the stacks of bags are wound upon a core 18. In Fig. 7 the roll is unwound in the opposite direction so that there is a closed front edge of the stacks of bags. In contrast thereto, the invention as claimed in claim 1 says that when the bags are unwound, the open side of the bags are in front.

Normally bags have their open side at a shorter side of the bags. This is known to the person of ordinary skill in the art.

Claim 2 of Koehn translates as follows:

2. Method according to claim 1, characterized in that the tube sections or the sacks made from them are wound up with their longitudinal seams in parallel to the winding axis.

That means that the openings of the bags are not arranged at the front as seen in the unwinding direction.

The reason why the invention proposes this arrangement lies in the fact that the openings of the bags have a single-sided tab with holes into which pins are inserted after the unwinding. This is shown clearly in Figures 3-5.

As regards US 4,688,368, you may see from sheet 1 of 2

of the drawings of this patent that the articles are wound up in one direction indicated by the arrow A in the Figures. But the Figures 1-5 show no winding-up roller at the center of the formed role. Also Fig. 6 does not show such a central winding-up roller. The reason for this can be seen from Fig. 7. The wound-up package of the reference is not unwound in the opposite direction but the innermost product is withdrawn from the innermost part of this package.

No person of ordinary skill in the art would combine the teachings of the German language reference DE 195 05 277 and of US 4,688,368 to arrive at the claimed invention, because the German language reference says in the Abstract that it is essential that the sections of the tube shall not be shifted with respect each other.

In the device of US 4,688,368, the products are dislocated against each other when they are withdrawn from the inner side according to Fig. 7.

CONCLUSION

No fee is believed to be due for extra claims, but in the event that any fee is deemed to be due, authorization is hereby given to charge deposit account 17-0055.

After the Amendment and Remarks, claims 1-3 and 4-9 are still pending and a Notice of Allowance for these claims is earnestly solicited.

Respectfully submitted,

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Translation of selected sections:

Abstract

The invention concerns a method and a device for the interlayering of flat objects, especially tubing sections arranged in stacks, with a take-up roll supported in a frame, so that it can be driven, onto which flat objects, transported on a take-up belt, can be deposited in the form of a roll. In such a device, the basic body forming the take-up roll has a step, which is parallel to its middle axis. As a result of this, the tubing sections, can be stacked so that the stack has a straight edge, and can be rolled up without the tubing sections being shifted with respect to one another.

Column 3, line 58 to column 7 line 28:

In the device 10 shown in this practical example, stacks or packets 12 of tube sections deposited with a straight edge, which originate, for example, from a tube-making machine, not shown here in detail, are interlayered. For example, a stack may consist of 40 tube sections and reach a height of 15 cm. Naturally, stacks of any arbitrary height can be processed. The stacks 12 are transported with a conveyor belt 14 in the direction of the arrow a shown in Figure 1. As shown in Figure 1, the device 10 consists of frame 16, in which a take-up axle 18, the structure of which will be described in detail later, is suspended in guides 20 of adjustable height. The height-adjustment is done with threaded spindles 22, which can be moved up and down with geared motor 24, so that the take-up axle 18 can be moved up and down, together with the rolled up roll. The geared motor 24, which is designed as a braking motor, protrudes from the frame 16 on the side.

The take-up belt 26, which extends along the entire width of the packet 12, is rolled up under tension together with the arriving transport stacks. The take-up belt 26 is unrolled from a traction roll 28, which is also supported in the frame. On the side, the traction roll 28 has a traction roll motor 30, which is designed to act as a braking motor and therefore can maintain the necessary tension of the take-up belt 26. From the traction roll 28, the take-up belt 26 is led through a deflecting roll 32, a control device 34 for the traction roll motor 30, another deflecting roll 36, and a deflecting roll 38 before it ends at the take-up motor 18 [Translator's note: Should be "24" instead of "18".] The inlet region for the

transported stack 12 lies at the deflecting roll 38 in device 10. There is a pressing belt 40 opposite this inlet region of the take-up belt 26, and this belt is guided through two rolls 42 and 44. The roll 42, which is directed toward conveyor belt 14, is set up so that initially it does not touch the transported arriving stack. Thus, this runs onto the take-up belt 26 and is then collected by the corresponding pressing belt 40, which compresses the tube sections with paper, which was just freshly provided with glue, in such a way that the glue will be distributed properly and will thus bind more easily. The pressing belt can be swiveled with a piston cylinder unit 46, which is solidly attached to the frame on one side and is linked on the side shield of the pressing belt on the other side. The take-up belt 26 is unrolled at a velocity which is lower than the transport velocity of the conveyor belt 14. As a result of this, the individually transported stacks 12 are brought into direct contact with one another, so that they can be rolled up behind one another in a space-saving manner, as it is indicated in Figure 1, and especially also in Figure 7.

The control device 34 for the traction roll motor 30 consists in its core part of a deflecting roll 48, which is supported on the side in rockers 50, that can be swiveled around a fixed point 52 on the frame. Piston cylinder units 54 are linked at the free ends of the rockers 50. Opposite the swivelable free end of at least one rocker 50, initiators 56 are arranged on top of one another, which can be triggered, for example, by touching the free end of a rocker 50. A loop is produced on the take-up belt by the swivelably suspended deflecting roll 48, as it is shown, as an example, in Figure 1. Now, the stacks 12 arrive transported discontinuously and, for each arriving stack, a section of the take-up belt 26 is wound by the take-up motor onto the roll forming on the take-up axle 18. As a result of this, the loop, which is formed around the deflecting roll 48, becomes shortened and the rockers 50 are swiveled upward. As soon as the rockers 50 have reached a predetermined end point, they lie opposite the uppermost initiator 56, which then triggers the traction roll motor 30 and makes it to move the take-up belt correspondingly, whereby then the rockers 50 are swiveled downward again by the piston cylinder units 54, which are under a prestressing force. Thus, as a result of this, it is ensured that the necessary tension is always maintained at the take-up belt.

In addition, a control device 58 is present for the geared motors 24 for moving the take-up axle 18 up and down. The control device 58 consists of two pressure rolls 60 and 62, which are also supported so that their height can also be adjusted in the frame 16. The pressure rolls 60 and 62 lie in the inlet region of the take-up axle 18 or against the coil rolled up on it and are pushed downward against a prestressing force of a piston cylinder

unit 64 when the diameter of the coil increases. As a result of this downward movement, the corresponding initiators 66 are initiated with the aid of a contact flag 68, which triggers the gear motors 24 and causes the take-up axle 18 to move upward.

Figures 3 to 6 show different embodiments of the take-up axle 18. It is common in all embodiments that they have a step 70, which extends over the entire length of the take-up axle 18 and is parallel to the middle axis of the take-up axle 18. Figure 3 shows a corresponding basic body 18 with a step 70 which cannot be adjusted. This basic body has an approximately spiral shape.

In the embodiment according to Figure 4, the basic body of the take-up axle 18 consists of a cylinder, onto which correspondingly shaped wedges 72, forming correspondingly shaped step heights 70, can be attached. Here, depending on the desired stack thickness, a different step shape can be created by placement of an appropriate wedge 72.

In the embodiments according to Figures 5 and 6, always cylinder segments 74 are arranged so that they can be swiveled out around a center of gravity 76 [sic], whereby, when these cylinder segments are swiveled out, the step height 70 is altered. This alteration occurs in Figure 5 using an excenter 78 with plane surfaces 80, which lie correspondingly against the cylinder segment 74, and as a result define the height of step 70. The cylinder segment 74 is always held at its free swiveling end by tension springs 82. In the embodiment according to Figure 6, swiveling of the cylinder segment 74 is achieved through a setting lever 84, which is L-shaped, and which can be swiveled around a bolt 86 in the direction of arrow b, and can be fixed in recesses 88. On one side, the lever 84 is fork-shaped, whereby the fork engages with a bolt at the free end of the cylinder segment 74. Such levers can be provided on both sides of the take-up axle 18 or on both sides of the take-up axle 18.

In Figures 7 and 8 the device 10 is shown during the taking off of the stack 12. Here the pressing belt 40 is lifted up from the stacks 12 by the piston cylinder unit 46. The stacks 12 are released onto the conveyor belt 14 moving in the direction of the arrow c, the belt always running at a higher velocity than the take-up belt 26, which is rolled up again onto the traction roll 28.

Patent Claims

1. Method for the storing of tube sections or of stacks formed from these, characterized by the fact that the tube sections, provided with equally directed longitudinal seams or sacks [sic] made of these, in a first step, are built into stacks with straight edges and predetermined height, and, in a second step, the formed stacks are rolled up into a roll, whereby the individual layers of the roll are separated from one another.
2. Method according to Claim 1, characterized by the fact that tube sections or the sacks [sic] made from them with longitudinal seams running parallel to the roll axis are wound up.
3. Method according to Claims 1 and 2, characterized by the fact that the before winding the individual stacks are prepressed briefly.
4. Device for performing the method according to Claims 1-3, whereby a roll axle is supported in a frame so that it can be driven, characterized by the fact that a stacking device, which is known in the art, is provided, from which the individual stacks are transferred to a take-up belt, and this take-up belt, loaded with the stacks, is rolled up to a roll, whereby the beginning of the take-up belt is attached to the roll axis.
5. Device for interlayering of flat objects, especially of tube sections deposited in stacks, with a take-up axle supported in a frame, so that it can be driven, onto which arriving flat objects transported on a conveyor belt can be deposited in the form of a roll, characterized by the fact that the basic body forming the take-up axle has a step running parallel to its middle axis.
6. Device according to Claim 5, characterized by the fact that take-up axle consists of a cylinder, on the mantle of which parts can be placed for forming the step.
7. Device according to Claim 5, characterized by the fact that the take-up axle consists of a cylinder, in which, to form the step, a segment, which is swivelable on one side, can be supported.

8. Device according to Claim 7, characterized by the fact that the segment on the swivelable step [sic] is held by one or several tension springs and that, using an excenter with plane surfaces, the segment can be swiveled against spring force, to form steps of different heights.
9. Device according to Claim 7, characterized by the fact that at the free end of the swivelable segment a bolt is arranged on the side, into which a fork of a swivelable setting lever is engaged, and the lever can be fixed in different attachment positions.
10. Device according to one of Claims 5 to 9, characterized by the fact that the take-up belt extends essentially over the entire side of the arriving transported flat objects.
11. Device according to one of Claims 5 to 9, characterized by the fact that a motor-driven traction roll is arranged in the frame, and this guides the take-up belt via a control device for the traction roll motor and with deflecting rolls.
12. Device according to Claim 11, characterized by the fact that the control device for the traction roll motor consists of deflecting roll that can be swiveled sideways, through which the take-up belt is guided, and of initiators, which detect the position of the swivelably supported deflecting roll
13. Device according to Claims 5 to 12, characterized by the fact that the take-up roll is guided in the frame so that its height can be adjusted.
14. Device according to Claim 13, characterized by the fact that the take-up roll can be driven through two threaded] rods on the side, which can be displaced with gear motors.
15. Device according to Claim 13, characterized by the fact that a control device is provided for the gear motor.
16. Device according to Claim 15, characterized by the fact that the control device has also at least one support roll which is led in the frame so that it can be displaced sideways and lies against the roll in the belt inlet region, whereby the

support roll can be displaced by a change in the diameter of the roll, and whereby the displacement can be detected by initiators.

17. Device according to one of Claims 1 to 12, characterized by the fact that in the inlet region of the flat objects to be interlayered, a pressing device is arranged opposite the take-up belt, and this can be displaced from a working position to a resting position.
18. Device according to one of Claims 5 to 17, characterized by the fact that the traction roll motor and the take-up motor are braking motors.